The isolation of peptides and generation of sequence-specific antisera to study expression of *Drosophila* Dms, Dsk, and FMRFamide gene products.

R. Nichols, J. McCormick, and I. Lim
Departments of Biological Chemistry and Biology, University of Michigan, 830 N. University St., Ann Arbor, MI 48109-1048

Peptides structurally related to the cardioexcitatory peptide FMRFamide have been found in both invertebrates and vertebrates and shown to act as transmitters and modulators of various physiological functions. These peptides contain the common C-terminal structure -RFamide.

We have isolated five -RFamide-containing peptides from an extract of adult *Drosophila*. Purification of the peptides was accomplished by chromatographic separation and identification by a -RFamide-specific radioimmunoassay. These peptides are encoded in three *Drosophila* genes: Dms (dromyosuppressin), Dsk (drosulfakinin), and FMRFamide.

To study the expression of these structurally-related peptides we have generated sequence-specific antisera to DMS, DSK, and FMRFamide peptides. Antisera were purified and extensively characterized to establish specificity. Whole mount immunolocalization studies have been conducted to determine the expression of these individual gene products throughout development in both neural and gastrointestinal tissue.

From our studies we have shown that DMS, DSK, and FMRFamide peptides are expressed throughout development. In addition, we can conclude that these polypeptide precursors undergo extensive posttranslational processing in a cell-specific manner. By use of double and triple-label immunolocalization techniques, we have established the expression patterns of these three different genes relative to one another.